

New York State Department of Transportation

Red Flag NB2258W014

By: Alex Abreu

Flag Date: September 22, 2022

Superseding Information:

No Flags Superseded

Structure Information

BIN: 1065318

Feature Carried: 278I278IX2M23027

Feature Crossed: 6TH AVENUE

Orientation: 8 - NORTHWEST

Region: 11 - NEW YORK CITY

County: KINGS

Political Unit: City of NEW YORK

Approximate Year Built: 1962

Posted Load Matches Inventory : Yes

Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party

Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder

This Bridge is not a Ramp

Number of Spans: 322

Verbal Notification Information

Person Notified: Heinz Joachim, P.E.

Date: September 22, 2022 3:00:00 PM

Of: NYSDOT Region 11

Signature Information

Signature: Alex Abreu, P.E. 099761-1

Date: October 03, 2022

Reviewed By: Robert Kemp

Date: October 03, 2022

Attachments: 10

Flagged Elements

Parent Element	Element	Total Quantity	Unit
Span Number : 58			
	113 - Steel Stringer	144	ft

Flagged Condition Description

This Red Flag No. NB2258W014 is NEW.

Location: Span 58, Stringer S2 at Pier 57 above 3rd Avenue EB Service Road at the intersection of 60th Street.

Description:

The end of Stringer S2 in Span 58 at Pier 57 exhibits section loss for the full web height for 6" wide along the connection angles with remaining thickness measured (RTM) ranging from 0.17" to 0.32" resulting in approximately maximum 58% section loss (Photos 5 and 6). The lower stringer web above the bottom flange exhibits two corrosion holes for 2"H x 1"W and 2"L x 1"H. The upper stringer web near the top cope exhibits one corrosion hole for 3"H x 2"L with 1-3/4" long vertical crack stemming from the bottom of the corrosion hole (Photo 7). The overall shear web area section loss is approximately 75% for this fascia stringer/curb girder.

Additionally, the left side bottom flange exhibits 30% section loss at the edge of the flange for 24"L x 2"W (Photo 8). The right side top flange exhibits 30% section loss at the edge of the flange for 12"L x 2"W (Photo 9). (refer to Red Flag Condition Sketch Photo 2 for more details).

This portion of Stringer S2 is approximately 18ft long from Pier 57 to Intermediate Diaphragm #1 (ID1) (Photo 4). The stringer at the connection to ID1 exhibits up to 1/16" section loss for the full height of the web for 2" wide along the connection angles at both faces of the stringer (Photo 10). Given the significant section loss and vertical crack in the stringer web at the connection angle at Pier 57, the stringer does not pose any safety concerns of falling onto pedestrians or vehicular traffic below at the time of inspection.

This is a newly flagged condition.

Notes:

1. Adjacent Girder G13 exhibits up to 15% section loss for the full web height for 3" wide along the connection angles.
2. The distance from the right fascia steel plate to the edge of the roadway is approximately 26" and from the right fascia steel plate to the right face of the Stringer S2 web is approximately 26".
3. Dye penetrant test was performed to determine the limits of the crack.
4. A single lane closure on 3rd Avenue EB Service road at the intersection of 60th Street and 30ft bucket truck are required to access this location.
5. The previous 2021 Biennial Report documented the above stringer location as CS3 with the following condition state note:
Stringer S2 exhibits up to 30% overall section loss (full height x 1"W) to the web with a 1" diameter hole at the upper web.

Flag Photographs

Photo Number: 1

Photo Filename: 22_Flag Location Plan.jpg

Gowanus Expressway
2022 Biennial Inspection - Field Sketch

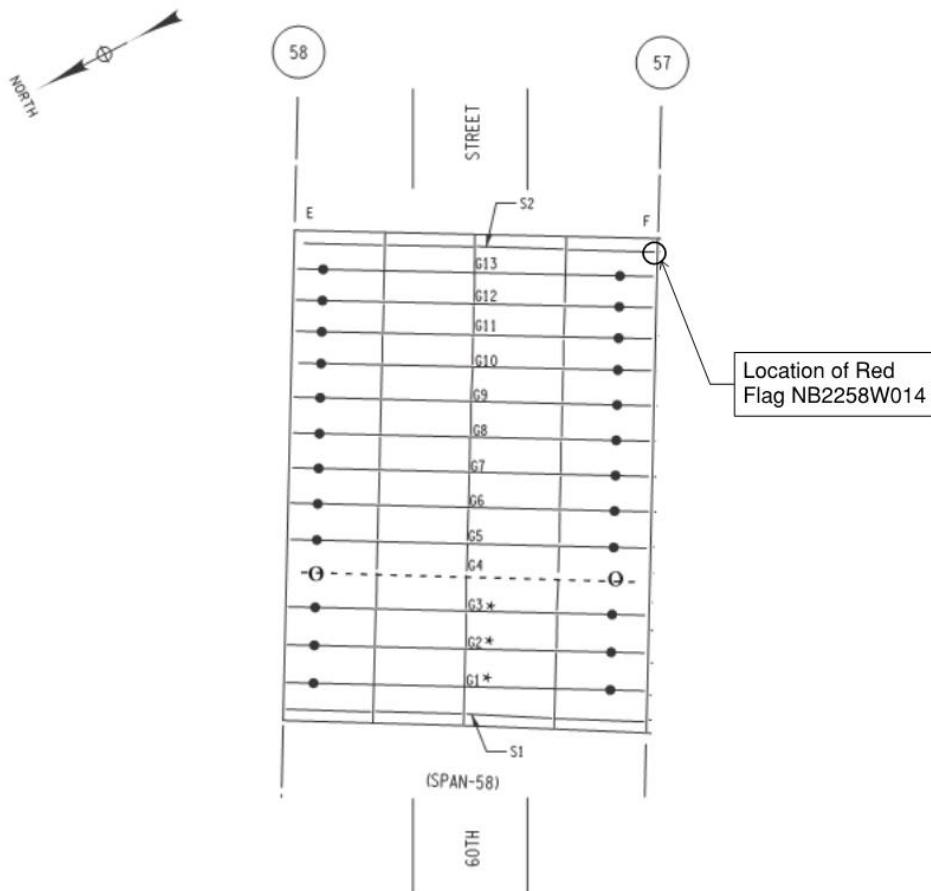
BIN: 1065318Team: AA/TSDate: 09/22/2022Span: 58Location: Stringer S2 at Pier 57**Red Flag Location Plan****WSP****Attachment Description: Red Flag Location Plan**

Photo Number: 2

Photo Filename: 22_Span 58_Pier 57_Stringer S2 Condition Sketch.

Gowanus Expressway
2022 Biennial Inspection - Field Sketch

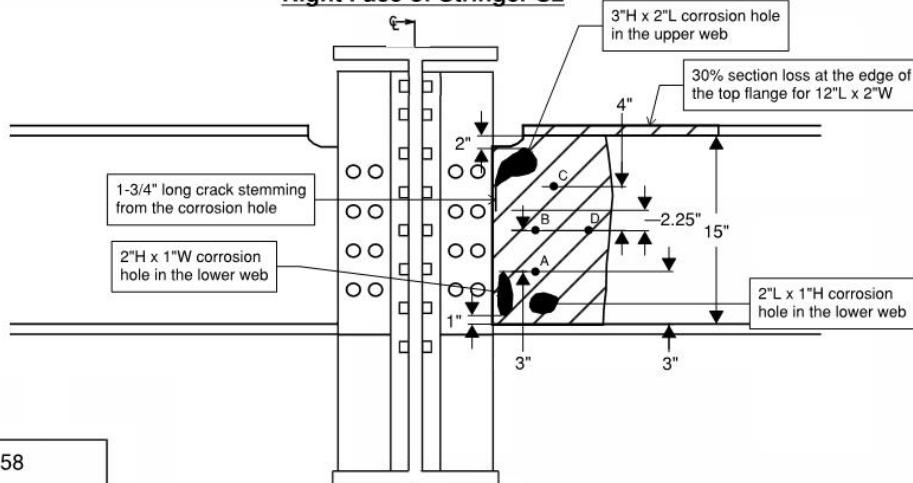
BIN: 1065318

Team: AA/TS

Date: 9/22/2022

Span: 58

Location: Stringer S2 at Pier 57

Right Face of Stringer S2

SPAN 58
@ PIER 57
S2

Point	D-Meter Readings (in)	Calculated Section Loss
A	0.18	55%
B	0.24	40%
C	0.17	58%
D	0.32	20%

Section loss Calculations:

Original web thickness = 0.40" (measured in field)

Shear web area:

$$(0.18" \times 1") + (0" \times 2") + (0.24" \times 3") + (0.17" \times 2.25") = 1.283 \text{ in}^2$$

Overall shear web area section loss:

$$[(13" \times 0.40") - 1.283 \text{ in}^2] / (13" \times 0.40") \times 100 = 75\% \text{ section loss}$$

Notes:

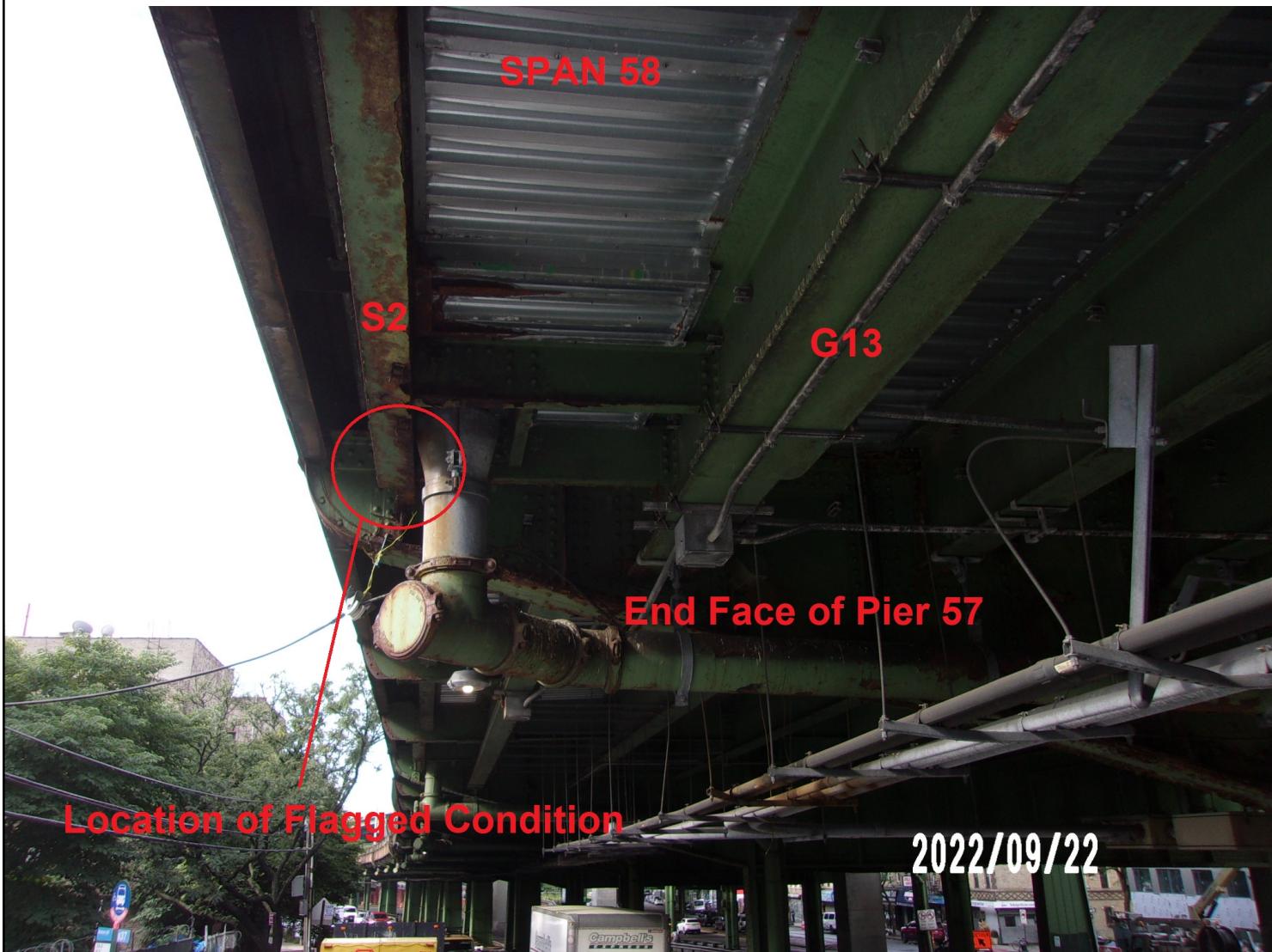
- The left side bottom flange of the stringer exhibits 30% section loss at the edge of the flange for 24" L x 2" W.
- The length of this portion of Stringer S2 between Pier 57 and ID1 is approximately 18ft.
- The distance from the edge of the roadway to the right fascia steel plate is approximately 26".
- The distance from the right face of the Stringer S2 web to the right fascia steel plate is approximately 26".

SCALE: N.T.S

Attachment Description: Red Flag Condition Sketch

Photo Number: 3

Photo Filename: 22_113_3435.JPG



Attachment Description: General view of the flagged condition at Stringer S2 in Span 58 at Pier 57. Looking Begin.

Photo Number: 4

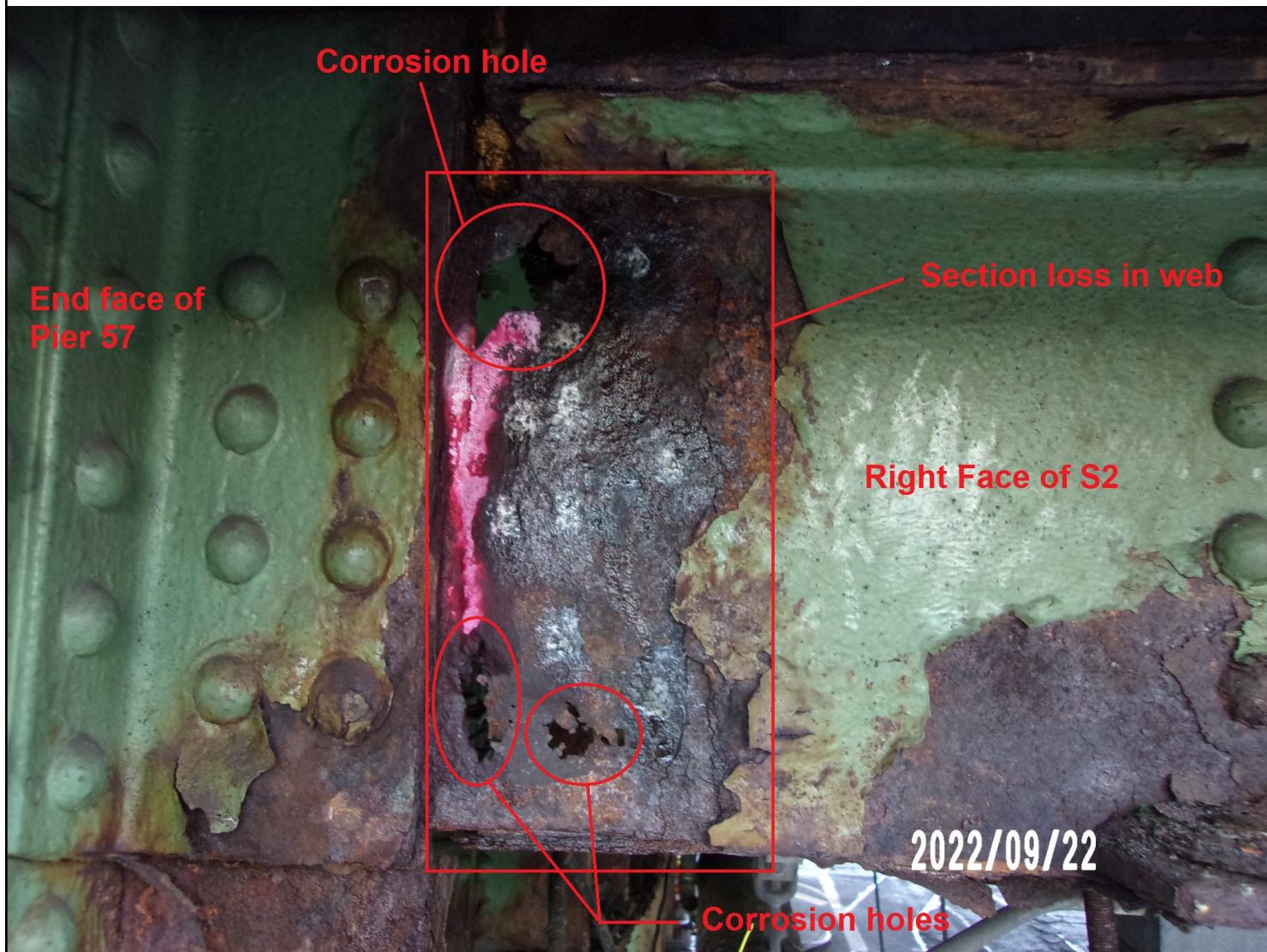
Photo Filename: 22_113_3430.JPG



Attachment Description: General view of Stringer S2 in Span 58 between Pier 57 and ID1. Looking Begin and Left.

Photo Number: 5

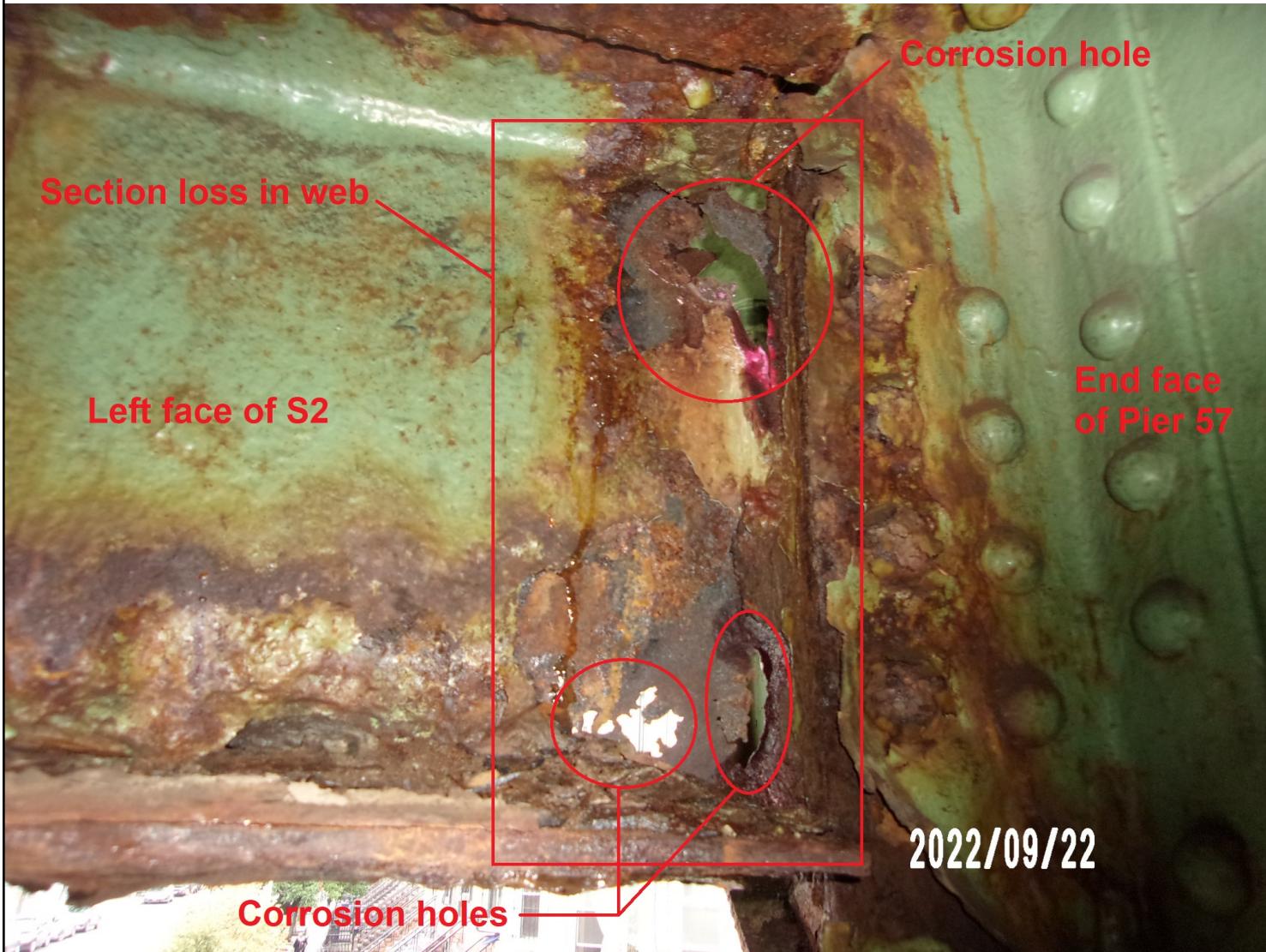
Photo Filename: 22_113_3405.JPG



Attachment Description: The right face of Stringer S2 in Span 58 at Pier 57. The end of the stringer exhibits maximum 58% section loss for the full web height along the connection angle with corrosion holes in the upper and lower web. Looking Left.

Photo Number: 6

Photo Filename: 22_113_3412.JPG



Attachment Description: The left face of Stringer S2 in Span 58 at Pier 57. The end of the stringer exhibits maximum 58% section loss for the full web height along the connection angle with corrosion holes in the upper and lower web. Looking Right.

Photo Number: 7

Photo Filename: 22_113_3407.JPG



Attachment Description: The right face of Stringer S2 in Span 58 at Pier 57. The stringer web exhibits 1-3/4" long vertical crack stemming from the bottom of the corrosion hole at the upper web. Looking Left.

Photo Number: **8**Photo Filename: **22_113_3420.JPG**

Attachment Description: The left face of Stringer S2 in Span 58 at Pier 57. The left side bottom flange exhibits 30% section loss at the edge of the flange. Looking Right.

Photo Number: **9**Photo Filename: **22_113_3421.JPG**

Attachment Description: The right face of Stringer S2 in Span 58 at Pier 57. The right side top flange exhibits 30% section loss at the edge of the flange. Looking Left.

Photo Number: 10

Photo Filename: 22_113_3432.JPG



Attachment Description: The left face of Stringer S2 in Span 58 at Intermediate Diaphragm ID1. The end of the stringer exhibits up to 1/16" section loss for the full web height along the connection angle. Looking Right.